

Pawnee-Buckner Subbasin

Newsletter

Agricultural Water Enhancement Program

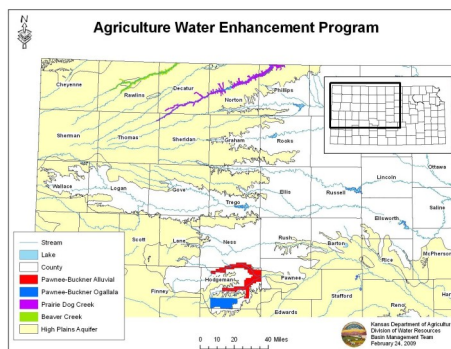
The Division of Water Resources partnered with the State Conservation Commission and Kansas Water Office to propose a \$4.5 million project, and it has three target areas: the Prairie Dog Creek subbasin; Beaver Creek subbasin; and Pawnee-Buckner alluvial valley in Hodgeman and Ness counties and the Ogallala subunit in Hodgeman County. Within these areas, the goal is to reduce groundwater and surface water withdrawals and consumptive irrigation use in water-short areas of both the Ogallala-High Plains aquifer and the interconnected alluvial aquifers and streams, while encouraging agricultural use of enrolled acres. The Hodgeman County Conservation Board, Upper Arkansas BAC, State Conservation Commission and the Kansas Water Office all provided letters of support.

GMD 3's proposal has the same goal of water use reduction in the Ogallala-High Plains aquifer, but their request is for \$8 million and has a target area of Gray County, a rapidly depleting area of the aquifer.

Varying somewhat from these projects is the proposal from the Kansas Bostwick Irrigation District. This project is aimed at conserving water by improving the efficiency of existing irrigation systems. To achieve this goal, the proposal is for \$600,000 to bury laterals in Jewell and Republic counties to save an estimated 30 percent of the transit losses from seepage and evaporation. Other potential benefits would be soil conservation and eliminating waste originating from the ends of fields.

Big Bend GMD 5 proposes retiring acres irrigated by "end guns" of center pivot systems that are the least efficient part of the irrigation system. The targeted areas are within GMD 5 and include the Rattlesnake Creek Basin. Their request is for \$2 million a year for four years.

Finally, Northwest GMD 4 proposes permanently retiring existing water rights within the high-priority area of Sherman County to achieve the locally set goals and objectives of the area. The permanent retirement of up to 2,000 acre-feet of historically consumed irrigation water use is the goal with a payment of \$2,000 per acre-foot. The total requested amount for this proposal is \$4 million.



For more information on the Agricultural Water Enhancement Program, visit the USDA-NRCS website at www.nrcs.usda.gov/programs/.

*Kansas
 has requested
 \$25.1 million
 for the new
 Agricultural Water
 Enhancement Program
 to retire
 water rights,
 remove end guns and
 bury laterals*

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Pawnee-Buckner Subbasin Newsletter

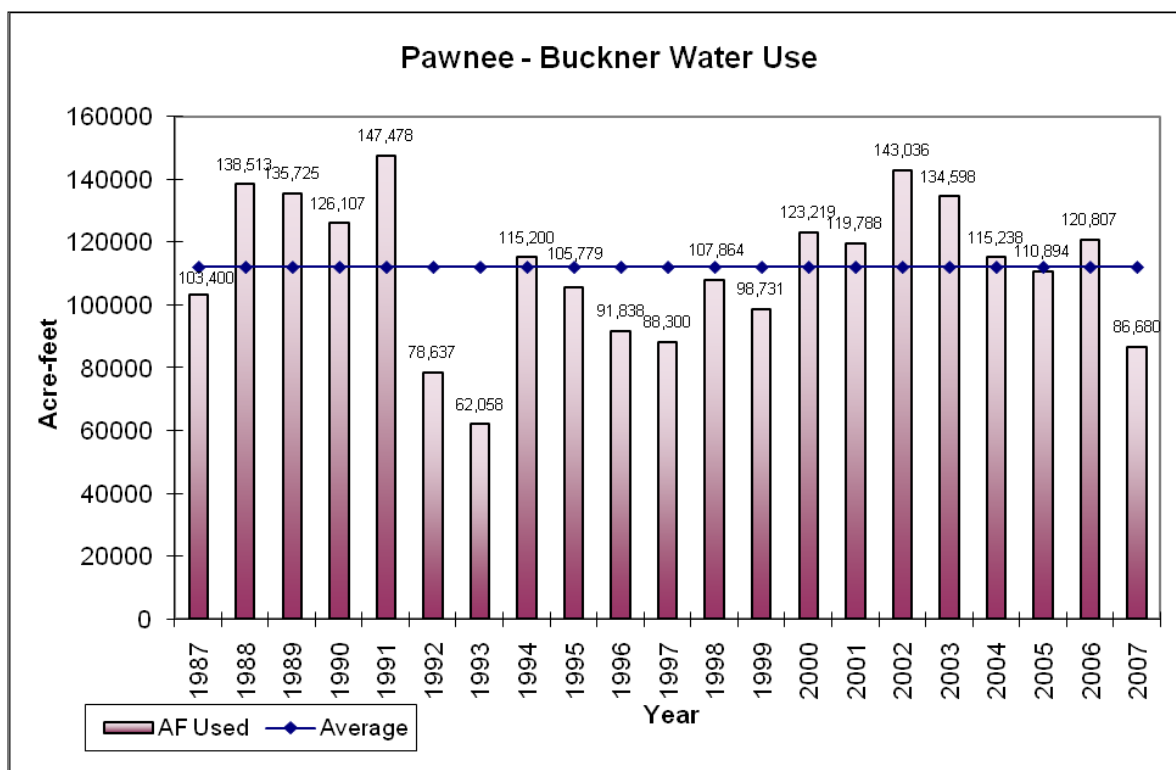
2008 Pawnee-Buckner Field Summary Available Online!

Continued monitoring of hydrologic conditions and their response to climate variations is important for evaluating the long-term effect water use has on this subbasin and to protect property rights.

The Basin Management Team compiles annual summaries of hydrologic data for each project area, and the 2008 Pawnee-Buckner subbasin area summary is now available. Data include USGS streamflow, National Climatic Data Center precipitation, water levels and water use, in addition to general background on the geographic area.

Precipitation levels were below average for 2008. Most of the Pawnee River water levels continued to climb, but the Buckner and Sawlog Creek water levels declined. Some of the five-year rolling averages have increased while others have declined. Continued monitoring of hydrologic conditions and their response to climate variations is important for evaluating the long-term effect water use has on this subbasin and to protect property rights. It is just as important to understand how fast the system recovers after a recharge event as it is to understand the impact of pumping and other factors on the hydrologic system.

For more detailed information on the Pawnee-Buckner subbasin area, visit our website at www.ksda.gov/subbasin/ and select Pawnee-Buckner then Field Summaries.



Total water use in the Pawnee Buckner Subbasin, all types of uses, from 1987-2007.

Division of Water Resources—Basin Management Team

Horse Thief Reservoir

Construction continues on the 450-surface-acre Horse Thief Reservoir in Hodgeman County. The reservoir is located 8 miles west of Jetmore along Buckner Creek, which is in the Pawnee Watershed District, the largest watershed district in the United States. The district encompasses 1.5 million acres in parts of Edwards, Finney, Ford, Gray, Hodgeman, Lane, Ness, Pawnee, and Rush counties. The Pawnee Watershed District began in 1965 and is responsible for the reservoir's development.

The reservoir will provide flood-control and recreational opportunities for the area, including camping, fishing, hiking and boating. Construction on the dam began in mid-April 2008, but not before archaeologists were able to examine the area for any ancient treasures. Dr. Holly Jones, a professor at Missouri State University, lead a team of archaeologists in the study. Artifacts of the Middle Ceramic Period were found dating back 800 to 1,000 years. Pottery shards, bone pendants, and bison and deer bones were found. The findings were presented to the public May 9, 2009, at the King Center in Jetmore.

Construction on the 86 foot tall, 7,200 foot long dam is expected to be complete in November 2009. Under ordinary conditions, it is expected to take four to five years for the lake to reach normal elevation. The district believes a large rain or snow could fill half the reservoir, however.

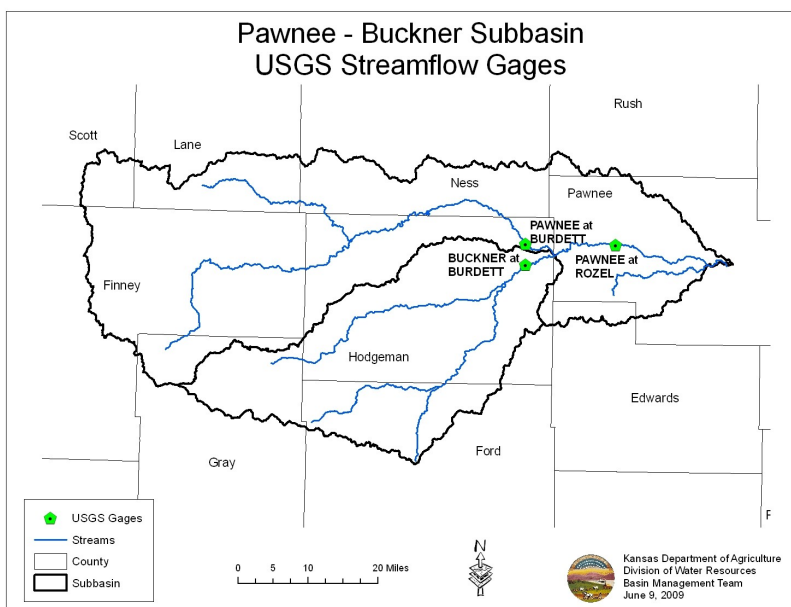
Funding for Horse Thief Reservoir has come, in part from the State Conservation Commission. The commission provided \$4.5 million from the Multipurpose Small Lakes Program. Also, a regional benefit district was formed and two revenue bonds approved for \$14.5 million, which will be repaid through a 15/100th of 1% sales tax in Hodgeman, Finney, Ford and Gray counties. The tax will be discontinued after 15 years.

For updates and more information, visit www.horsethiefres.com.



Horse Thief Reservoir was named for a box canyon just downstream of the dam that had been used to hide stolen horses.

United States Geological Survey Streamflow Gages



The U.S. Geological Survey maintains three stream gage monitoring devices in the Pawnee-Buckner subbasin.

Streamflow conditions are measured every 15 to 60 minutes and data are stored at the site. Every one to four hours, the data are sent to USGS offices and transmitted online for public use almost immediately.

Data can be shown in either graph or table form. Precipitation can be measured at some of the gages near the area. For example, Arkansas River at

Local Streamflow Gages:

- Pawnee River Near Burdett (07140850)
- Buckner Creek Near Burdett (07141175)
- Pawnee River at Rozel (07141200)

Visit: http://waterdata.usgs.gov/ks/nwis/current/?type=flow&group_key=basin_cd

Click on a station or enter the (station ID number) above.

Great Bend (07141300). Please take advantage of this useful tool.

Kansas Department of Agriculture, Division of Water Resources, Basin Management Team



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In essence, science is a perpetual search for an intelligent and integrated comprehension of the world we live in. ~ Cornelius Bernadus Van Neil

Basin Management Team Mission Statement

To analyze aquifers and stream systems in targeted areas and work with stakeholders to develop and assess strategies to protect water rights and improve hydrologic sustainability.

The program uses a five-phase process that includes:

- Initiating the project
- Analyzing and educating
- Evaluating alternatives
- Making recommendations
- Implementation

Visit www.ksda.gov/subbasin/ to learn more.

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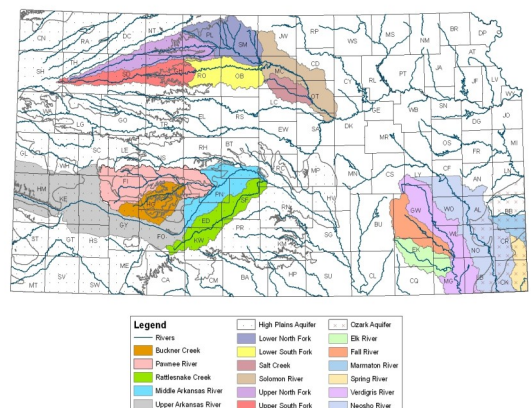
Kansas Department of Agriculture Newsletters

The Basin Management Team provides bi-annual publications with the latest news and events for each of the targeted project areas. Targeted areas currently include Upper and Middle Arkansas River subbasins, Pawnee-Buckner, Rattlesnake Creek, Solomon River Basin, Ogallala-High Plains aquifer and the Ozark Plateau aquifer systems. To receive these bi-annual publications, visit our website at www.ksda.gov/subbasin/mailling_list.

Also, the Division of Water Resources publishes a quarterly newsletter that provides information on Kansas' water resources. You can view current and past newsletters, and sign-up to receive them electronically, at www.ksda.gov/dwr/.

The Kansas Department of Agriculture recently started a quarterly newsletter called the KDA Connection. You can sign up for this newsletter at www.ksda.gov/mailling_list/.

The newsletters are distributed electronically, or they can be viewed online.



Basin Management Team Project Areas